



U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION 9

CLEAN WATER ACT COMPLIANCE OFFICE

NPDES Permittee: Bill Bianchi

Facility: Arrowhead Ranches
2915 Pepper Road
Petaluma, CA 94952
(Conditional Waiver of Waste Discharge Requirements Order R1-2012-0003; ID: 1B11106DSON)

Receiving Water: Stemple Creek

Date of Inspection: April 14, 2014

Inspection Participants:

U.S. EPA: Glenn Sakamoto, CWA Compliance Office, (415) 972 - 3556
Becky Mitschele, NPDES Office, (415) 972 - 3492

California Regional Board 1: Cherie Blatt, North Coast Regional Water Quality Control Board
(707) 576 - 2755

Western United Dairymen: Melissa Lema, Field Representative

Report Prepared By: Becky Mitschele, Physical Scientist, US EPA Region 9

Report Date: May 9, 2014



1.0 SUMMARY

The California North Coast Region contains approximately 150 dairies, housing about 50,000 cows. The United States Environmental Protection Agency (EPA) and the California North Coast Regional Water Quality Control Board (RB 1) performed an inspection of Arrowhead Ranches to determine compliance with the conditional waiver of the RB1 Waste Discharge Requirements (order number R1-2012-0003) and to ensure no unauthorized discharges are occurring. RB 1 is conducting inspections of all facilities seeking coverage under the conditional waiver permit.

EPA and RB 1 have not previously inspected this facility, and no past regulatory history exists. The weather at the time of the inspection, on April 14, 2014, 12:00 p.m., was clear and dry. EPA and RB 1 observed no discharges or evidence of past discharges.

2.0 BACKGROUND: NORTH COAST PERMIT PROGRAM (RB 1)

The State Water Resources Control Board's 2004 Policy for the Implementation and Enforcement of the Nonpoint Source Pollution Control Program requires that nonpoint source discharges of waste be regulated by waste discharge requirements (WDRs), waiver of WDRs, or prohibitions to ensure compliance with Regional Water Board Water Quality Control Plans. As such, RB1 adopted dairy and concentrated animal feeding operation (CAFO) permits on January 19, 2012. The RB1 permitting program consists of a federal national discharge elimination system (NPDES) permit, a state WDR permit, and a conditional waiver of WDR permit. All operators of dairy facilities were required to enroll under one of the three permits by April 30, 2012.

The conditional waiver of WDR is a general permit and is applicable to existing dairy operations that have not expanded (as of 1/19/12). RB 1 requires new or expanding dairies to apply for an individual WDR or individual waiver of WDR permit.

The conditional waiver of WDR permit prohibits discharges to surface water and groundwater, requires specific production and land application best management practices, and establishes record keeping and monitoring requirements. Specifically, the waiver permit prohibits:

- Direct discharges to groundwater;
- Discharges of manure and process wastewater to surface water or groundwater;
- Discharges from the production area of stormwater that has come into contact with manure or process wastewater;
- Discharges to surface waters via tile drain lines or irrigation return flows (i.e. tailwater), including irrigation water that comes into contact with process wastewater or manure;
- Discharges from the land application that do not comply with the requirements in the water quality plan (or nutrient management plan for Large CAFOs) and the monitoring and reporting plan;
- Disposal of mortalities in liquid manure or process wastewater systems; and
- Animal access (i.e. direct contact) to surface water within production area.

The waiver permit requires facilities that meet EPA's Large CAFO size threshold (i.e. 700 dairy cows) to develop and implement a nutrient management plan. Facilities under the size threshold



must have a water quality plan. These plans are submitted along with the notice of intent or permit application. Additional waiver permit requirements are explained in the applicable section under “Major Findings” of this report.

2.0 PARTICIPANTS

Bill Bianchi, Arrowhead Ranches

Glenn Sakamoto, US EPA

Becky Mitschele, US EPA

Cherie Blatt, Regional Water Quality Control Board 1

Melissa Lema, Western United Dairymen

3.0 FACILITY DESCRIPTION

Arrowhead Ranches is a pasture based dairy that has a capacity of 500 milking plus dry cows and 200 other dairy cattle.¹ The facility is located at 38.268789 and -122.77535. At the time of the inspection, the production area was not operational but has two storage ponds (i.e. no cows confined onsite). The facility has 920 acres available for land application and plan on applying manure/process wastewater for 400 acres. The fields are currently being grazed with cows from a neighboring facility. The permittee land applies process wastewater to the grazing fields using a big gun irrigation system.

4.0 MAJOR FINDINGS

4.1 Production Area

The production area includes the animal confinement area, milking parlors, manure and process wastewater storage area, raw materials storage area, and any other waste containment areas. 40 CFR § 122.23(b)(8). Since the permittee does not have an NPDES permit, no discharge is authorized from the production area, including overflows from a 25-year, 24-hour storm event.

Pursuant to the waiver permit, RB 1 specifies the following storage and containment area requirements:

- Storage facilities within a floodplain must be protected from inundation or damage from a 100-year flood event;
- Manure ponds constructed after 1/9/12 must comply with Natural Resources Conservation Service Waste Storage Facility Code 313, including a maximum specific discharge (unit seepage rate) of 1×10^{-6} cm/sec.; and
- Existing manure pond liners must meet or exceed a minimum of 10% clay and not more than 10% gravel, or the liner must be constructed of artificial materials of equivalent or greater impermeability.

¹ The facility submitted a Water Quality Plan on December 10, 21012 with 335 milking plus dry cows and 165 other cattle. The facility is permitted with a higher capacity.



The production area of Arrowhead Ranches is not located within a flood plain. See Appendix C. The facility has four existing ponds meeting the state's liner requirements and maintaining more than the required 2 feet of freeboard. Manure on the concrete areas in the production area is generally scraped to the Main Pit. The Secondary pond is located adjacent to the Main Pit and acts as extra capacity. Pond #1 drains to Pond #2. Berms were present around pond 2. These ponds collect liquid drainage from the corrals, milk barn wash water, and some rainwater. However, the manure ponds should be trimmed of vegetation. See table below for capacity of each pond:

| Manure Pond Description | Capacity |
|--------------------------------|----------------------|
| Main Pit | 440,000 cubic feet |
| Secondary pond | 207,900 cubic feet |
| Pond below the Barn #1 | 105,600 cubic feet |
| Pond below the Barn #2 | 380,160 cubic feet |
| Total manure pond capacity | 1,133,660 cubic feet |

All buildings had gutters for stormwater diversion, and the raceways are scraped. Dry manure is stockpiled in a dry bare lot and feed is stored on a concrete pad under roof. Fuel is stored off of the ground and protected by a concrete pad and wall. The inspectors did not observe any evidence of production area runoff. See photos 1 to 24.

4.2 Land Application Areas

The dairy practices rotational grazing and irrigation system management. Manure water is applied away from surface waters. Per discussions with the owner, the amount of manure applied is based on previous experience, modified with new information, adjusted for crop performance and environmental impact, and is based on plant needs. Irrigation water is applied as uniformly and efficiently as possible.

Mr. Bianchi said that manure solids are distributed on the pastures about once per year. Manure liquids are irrigated on each field utilizing a liquids tank and the big irrigation gun about once per year in the summer. Application to fields is rotated, however, not all fields receive this fertilizer each year.

4.3 Records/Reports

The conditional waiver permit contains monitoring, sampling, and record-keeping (i.e. Monitoring and Reporting Program).

The waiver permit requires facilities that meet EPA's Large CAFO size threshold (i.e. 700 dairy cows) to have and implement a nutrient management plan. Facilities under the size threshold must have a water quality plan. Dairies with less than 700 mature dairy cows are encouraged prepare and implement an NMP.



All facilities need to submit an annual report and include the results of the required sampling for stormwater runoff and/or surface waters as well as agricultural wells. The facility may conduct this monitoring or participate in a group watershed monitoring program. Sampling takes place during or directly following major storm events of one inch or more per 24 hours, during the rainy season, beginning in the winter of 2012. The permittees must monitor surface waters for electrical conductivity, total ammonia nitrogen, pH, and temperature. Agricultural wells are sampled for nitrate and fecal coliform bacteria.

For facilities that transfer manure or process wastewater, a manifest is required.

Arrowhead Ranches had all required monitoring and record keeping. The facility also has a draft NMP (i.e. estimated by Fall 2014) and a water quality plan. The facility land applies all manure and process wastewater and does not transfer any manure off-site.

4.4 *Best Management Practices and Receiving Water(s)*

Stemple Creek runs adjacent to facility's land application fields. Stemple Creek is listed as impaired pursuant to Section 303(d) of the Clean Water Act. The state established a total maximum daily load in 1997 to ensure attainment of water quality objectives. The contaminants of concern causing impairment are nutrient and sediment from nonpoint sources. The TMDL establishes numeric targets for dissolved oxygen, temperature, pH, total ammonia, and sediment.

The facility maintains vegetation in all fields, including those adjacent to Stemple Creek. See photos 14, 16, and 17.

5.0 RECOMMENDATIONS

EPA noted that the facility should add best management practices to keep manure and sediment out of Stemple Creek prior to the rainy season. EPA also supports the state's recommendations, which were made to ensure compliance with the Regional Board's Waiver requirements.

1. Weed growth on the berm of Pond 1 was high and hinders inspection. Weeds growing on manure pond berms must be trimmed regularly to aid in checking the pond for leaks.
2. Beginning now, the dairy owner must collect four representative groundwater samples over two years, and submit the results to the Regional Water Board with future Annual Reports. An extension request form is attached for declaring the timing of sample collection.
3. The Water Quality Plan requires dairies to submit maps showing the location of wells and septic systems. Please add these items to the dairy maps and submit by November 30 such as with your 2014 Annual Report.
4. NMPs are not required under the Waiver, however, they are recommended because they demonstrate permit compliance such as with the Waiver prohibitions (Waiver page 11) and Waiver Attachment B: California Water Code Title 27. Regional Water Board recommends that the facility works with a technical service provider to develop and implement a NMP as discussed in the Waiver MRP and MRP-Appendix 2.



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APPENDIX A. Staff Field Notes

INSPECTION FIELD NOTES (North Coast area CAFOs) EPA Region 9 Compliance Evaluation Inspection (CEI) Official Use Only (Inspector's field notes used to document observations)

FACILITY INFORMATION

Inspection Date: 4/14/2014 EPA Inspector: Glenn Sakamoto
Accompanying State Inspector: Cherie Blatt
Others: Becky Mitschele (EPA); Melissa Lema
(Western United Dairymen)

Facility Name/Address:
Arrowhead Ranches
2915 Pepper Road
Petaluma, CA 94952

Owner/Operator Name/Address: Phone #: () 484 - 5324
Bill Bianchi
Address: same as facility

NPDES ID No.: Conditional waiver of WDR (state permit); ID number 1B11106DSO

GPS Coordinates (Lat./Long.): 38.268789/-122.77535

Refer to Attached EPA APPENDIX J (NPDES COMPLIANCE INSPECTION REPORT
FORM 3560-3 for violation codes pertaining to this inspection)

ANNUAL REPORT REVIEW

ANNUAL REPORT

- Monitoring Year: 2013 (November 1 through October 31 for proceeding 12 month period)
- Submittal Date: Due November 30 each year

REPORTED ANIMAL POPULATION

- Milk Cows: 700 vs Actual # observed during inspection: none (no cows onsite)
- Calves: vs Actual # observed during inspection:
- Dry Cows: vs Actual # observed during inspection:
- Heifers: vs Actual # observed during inspection:
- Other (explain):

MANURE INFORMATION

- Amount of manure spread on cropland at the facility: 400 out of 920 acres
- Amount of manure hauled off site: none; storage and compost area for solids, 4 manure ponds
- If hauled off site (e.g. composting operation), name and location of operation: NA

INSPECTION OBSERVATIONS AND SUMMARY

Facility using only pasture. No cows in production area.



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APPENDIX B. Photographs - April 14, 2014 taken by Cherie Blatt, North Coast Regional Water Quality Control Board



Photos 1 and 2: Clean scraped concrete lanes



Photos 3 and 4: Concrete lanes are scraped to Main Pit



5. Concrete lanes are scraped to Main Pit



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6. Manure on concrete lanes in Animal Feeding/Housing barn is scraped to Main Pit. Note concrete curbs for scraping



7. Gutters divert clean rainwater away from manured areas



8. Rain gutters on Animal Feeding/Housing barn



9. Rain gutters on Animal Feeding/Housing barn



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10. Concrete lanes are scraped to Main Pit (left). Note rain gutters on Animal Feeding/Housing barn on right



11. Secondary manure pit west of Animal Feeding/Housing barn



12. Main (manure) Pit west of Animal Feeding/Housing barn



13. Manure ponds north of Milk Parlor



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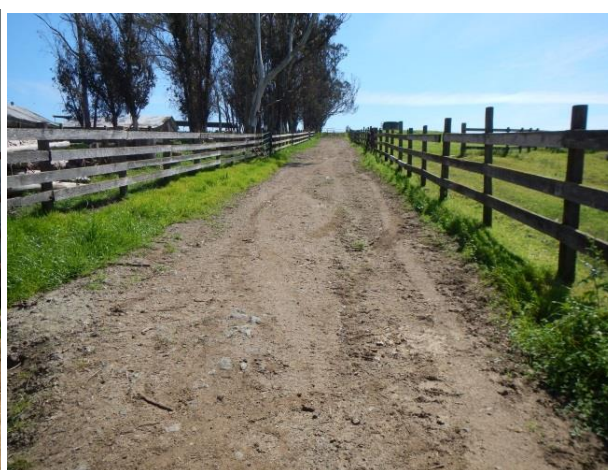
14. Pastures north of Animal Feeding/Housing and Milk Parlor



15. Storage area



16. Cow lanes to pastures



17. Lanes to pastures



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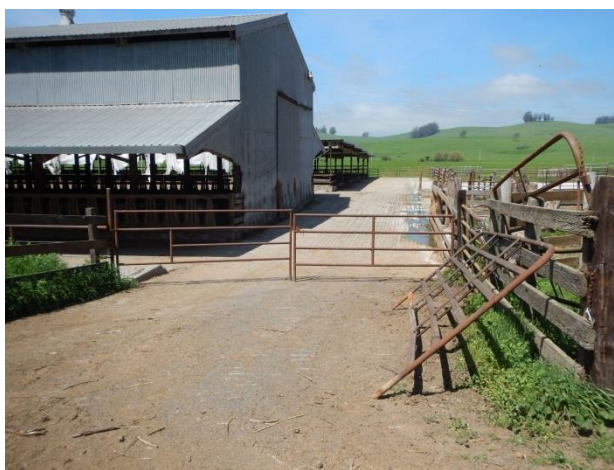
18. Manure solids from scraped areas in the Production Area are stored west of the Production Area. This manure is applied to the fields rotationally. This area drains to the manure pond.



19. Feed storage building



20. Feed storage building



21. Animal Feeding/Housing Barn



22. Animal Feeding/Housing Barn



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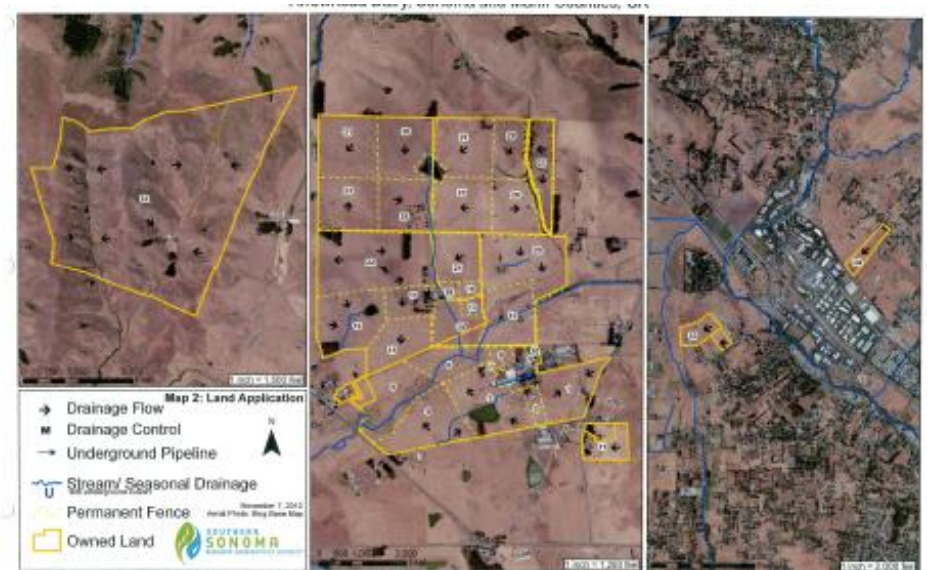


23. Production area lane looking east

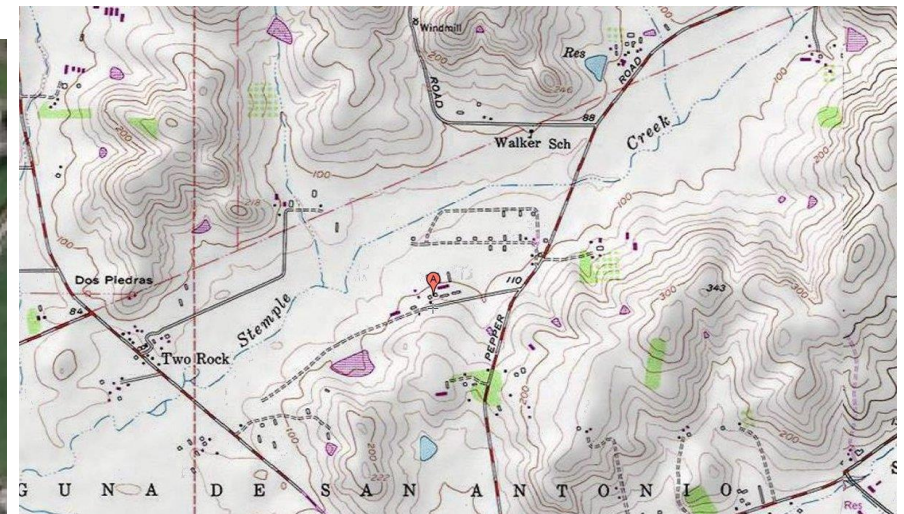


24. Fuel storage tanks

Appendix C. Maps of Production and Land Application Areas



Map 1. Arrowhead Dairy, Sonoma and Marin Counties, CA



Map 2. Image from Google Earth showing production area and Stemple creek and Topographic Map showing facility is approximately 110 feet above sea level.